No. 19.-Dot-and-Dash Codes and How to Learn Them.

#### BY A. HYATT VERRILL. Expert on Radio Technology.

Most people are quite naturally interested in radio sets for hearing the and entertainments from broadcasting stations. But it adds a

The entertainment programs are pleasant and enjoyable, but these take place only at stated times, and are of short duration. On the other hand, the dot-and-dash signals are going on day and night, and if one can read them a vast amount of information and interesting facts may be obtained. Of course, many are sent in codes, sometimes in the standard commercial telegraph codes, and at other times in private code or The entertainment programs are and at other times in private code or cipher, but there is a lot of fun tak-ing down messages and trying to de-code them. A knowledge of the dot-and-dash alphabets is a valuable ac-

DISTRESS SIGNAL ... --quisition, for one never knows when such knowledge may come in handy, or may even save some one's life.

UNDERSTAND ... FINISH .... DON'T UNDERSTAND - ....

Code Easily Learned. Many people would like to know the dot-and-dash code—the "Morse" code, as it is commonly called—but imagine it is difficult and takes a great deal of time to learn. This is a great mistake. The fact that boys learn to use it quickly proves that it is not difficult to acquire. To be sure, it takes time and practice to become proficient, but this comes with practice, once the alphabet is learned. practice, once the alphabet is learned practice, once the alphabet is learned.
If you wish to have or use a sending
set, you must know Morse, for in
order to obtain a license to send messages an examination must be passed
in which a knowledge of the dot-anddash code is included.

There are several of these "Morse"
codes in use the original or real.

and dashes. The dot is a sharp "dee," while the dash sounds like "dah." while the dash sounds like "dah."
Thus it is much easier to remember the International signal for F if you think of it as "dee dee dah dee" than if you think of it as . . . . . and so on with all the other letters.

Important Letters First. great deal to one's pleasure and is very interesting to hear and understand the dot-and-dash signals constantly flying here, there and everywhere in the ether. These are the important things in radio, the real messages that mean something, the vital conversations, warnings, advices and the news of the air.

The hest and easiest way to absorb this code is to learn a few of the more important letters first—letters which are most often used, and which, by themselves, can be formed into words. It is just as easy to do so, and gives greater speed in learning to recognize syllables as independent letters. The code is like shorthand in this respect, and a good operator never thinks of the separate dots and dashes or letters, but recognized well known combinations. Thus,

F. G. H. I. and with these form still more combinations, such as Ache, Head, Ice, Idea, Gab, Gad, etc.
Another matter to bear in mind is the fact that no letter in the International code contains more than four dots and dashes, and, therefore, if you hear five or more you will know it is a numeral or some code signal for "finish," an interrogation, exclamation, "wait," etc. The numerals are the easiest things to learn. From 1 to 5 they are made up of dots followed by dashes—one dot for each unit—while from 6 to 10 they are composed of dashes followed by dots, with a dash for each unit. If you remember these rules and practice with a friend by means of a buzzer, you will be surprised to find how easily and rapidly you can learn the with a friend by means of a buzzer you will be surprised to find how easily and rapidly you can learn the International code. By a buzzer I mean one of the little buzzers used in offices for summoning a boy or a stenographer, or one of the buzzers soid in electrical shops. An ordinary electric door bell, with the bell removed will answer the purpose just as well. If a buzzer is exceiving set, it will start waves each time it buzzes, which will be audible over the set. Such a buzzer is exceillent for testing for sensitiveness in a crystal set. By sounding short and long buzzes by means of a key or even by keeping one wire free and touching it to a contact for a shorter or longer space, dot-amd-dash messages may be sent. With two persons doing this, it is very easy to learn to send and to receive, for the person sending can use a message written in letters, and thus secure practice in rapidly translating them to letters.

May Use Spark Set.

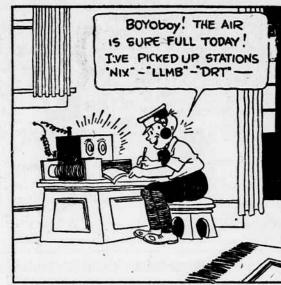
With a small sending set, such as an old-fashioned spark set, the same should shape to fit of the pressure screw acting on the disks are assembled in two small columns in the porcelain, the pressure screw acting on the disks are assembled in two small columns in the porcelain, the pressure screw acting on the disks are assembled in two small columns in the porcelain, the pressure screw acting on the disks are assembled in two small columns in the porcelain, the pressure screw acting on the disks are assembled in two small columns in the porcelain, the pressure screw acting on the disks are assembled in two small columns in the porcelain, the pressure screw acting on the disks are assembled in the pressure screw a

With a small sending set, such as an old-fashioned spark set, the same results may be obtained; or, if you are not sufficiently proficient to secure a license to operate a sending set, you can rig one up to work with a small spark coil or buzzer coil. This does not require a license. (Copyright, 1922.)

Tomorrow-"The Vacuum Tube-How It Works."

#### MARCONI MAY ATTEND CHICAGO RADIO SHOW

RADIO RALF—









## **New Apparatus and Devices**

By Ralph Brown, Radio Engineer

small spring lifts this pressure equal-izer from the disks when the pressure

A NOVEL NEW FILAMENT RHEO- through a cross piece or equalizer. A small spring lifts this pressure equal-

When the "soft" vacuum tubes are is relieved, so that the circuit used for radio detectors a very close regulation of filament current is usually required. Ordinary rheostats, unless equipped with vernier control, often do not give fine enough current

enjoy the operatic entertainment rendered by the La Scala Singers.

Mr. Williams reports that the foreign manufacturers are keenly interested in the rapid developments in the American radio market and will return to America with an interest. cation, nor can we say that it cannot be guaranteed."

Twenty-five years ago Marconi
said, he had experimented in sending
communication from point to point
without that message being picked
up elsewhere.

"But the possibility of broadcasting," he continued, "developed along
with these experiments, and this became so fascinating that it usurped
the secret method, excepting as the
latter was followed up by the Italian
navy and the other diplomatic users
of radio." return to America with an intere-

### SECRECY FOR MESSAGES BY RADIO NOT PLEDGED

LONDON, June 5 .- In a recent inter-That the Chicago radio show in this city, C. S. Franklin of the Marthe Coliseum in October will subin which a knowledge of the dot-and-dash code is included.

There are several of these "Morse" codes in use, the original, or real, "Morse" being used largely by land telegraph companies and a few coastwise vessels. But the big radio stations and practically all ships use "International." This is far simpler than real Morse. Owing to the fact that there are no spaced dots, as in the Morse code, it is the code most widely used in radio, and is therefore best to learn. In addition to these codes, there is the Navy code, but this is used only by the Navy and the average person need not bother with it.

In studying the code it is easier if you learn to think of the dots and dashes as sounds, rather than as dots.

In studying the code it is easier if you learn to think of the dots and dashes as sounds, rather than as dots.

#### BY RADIO TODAY

Complete Programs of Radio Broadcasting Stations.

NAA-Naval Radio Station, Radio, Va. 10:30 a.m.-Meteorological report on Noon and 10 p.m.-Time signal, folowed by weather report and ship

10:30 p.m .- Naval press news; wave ength, 2,650 meters.

WWX-Post Office Department. 10 a.m. - Weather report for the District of Columbia, Pennsylvania, Ohio, Maryland, Virginia and West

Virginia. 10:30 a.m.—Marketgram (fruit and vegetables) on 1,100 meters. 12:30, 2:15 and 3:30 p.m.—C. W marketgram telegrams on 1,980 me

ters.

5 p.m.—Wholesale daily report on 1,160 meters by radiophone.

7:30 and 8 p.m.—Market report on 1,160 meters by radiophone.

WMU — Doubleday & Hill Electric Company (360 Meters). 4:30 to 5:30 p.m.—Base ball scores announced; "Rio Nights" (Thomp-son), "Schon Rosmarin" (Kreisler), son, Schon Rosmarin (Kreisier),
"On the Campus" (Sousa), piano; "I'm
Just Wild About Harry"; "Valcik"
(Mokrejs), "Canti Moderni" (Auici-di
Donato), piano; "Stumbling" (Zoz Confrey), "Raymond Overture" (Thomas),
"Praeludium" (Jarnefeldt), piano;
"Lalawana Lullaby" (Starke), "Rhapsodie" (Von Dohnanyi) "Comrades of Just Wild About Harry": "Valcik" (Mokrejs), "Canti Moderni" (Auici-di Donato), piano; "Stumbling" (Zoz Confrey), "Raymond Overture" (Thomas), "Praeludium" (Jarnefeldt), piano; "Lalawana Lullaby" (Starke), "Rhapsodie" (Von Dohnanyi), "Comrades of the Legion" (Sousa), piano; "Do It Again"; "Roses From the South" (J. Strauss), "Sultano A Te" (Cardiferro Fucito); "Lovable Eyes" (Schwartz-Atteridg), "Rosamunde" (Schubert), "Ballet Egyptian" (Lugini), piano; "Dany Quartet (360 meters). Atteridg), "Rosamunde" (Schubert) "Ballet Egyptian" (Lugini), piano base ball scores announced.

with these experiments, and this became so fascinating that it usurped the secret method, excepting as the latter was followed up by the Italian navy and the other diplomatic users of radio."

Recent announcements that Marcon is coming to the United States for the purpose of carrying out his long-hinted efforts to establish companied by Ella Schneider; so-made through the press.

WPM—Thomas J. Williams, Inc. (360 Meters, Eastern Standard Time).

12:30 p.m.—News items; reports on stone automobiles.

8 p.m.—Plano selection, by "Duo Art" reproducing piano; A. B. Griffith, "Man of Many Noises"; soprano solo, Lucy Dickson Marks, accompanied by Eva Webster Hopkins; for the purpose of carrying out his long-hinted efforts to establish companied with Mars have been made through the press.

WPM—Thomas J. Williams, Inc. (360 Meters, Eastern Standard Time).

(360 Meters, Eastern Standard Time).

9 to 9:15 a.m.—Music.

11:30 p.m.—Results of all league of music.

2:30 p.m.—Base ball scores; women's fashion newspaper; program of music.

2:30 p.m.—Base ball scores; program of music.

2:30 p.m.—Base ball scores; program of music.

5 p.m.—Base ball scores; program of music.

6 p.m.—Base ball scores of partyling of p.m.—Special address and populational industrial conference board; official weather fore-active program of music.

6 p.m.—Base ball scores; program of music.

6 p.m.—Base

3YN-National Radio Institute (360 Meters). 6:30 to 7 p.m.—Radio spark code. WVI—United States Signal Corps, Fort Wood, N. Y. (1,450 Meters).

8:50 p.m.—Instruction in radio. 9 p.m.—Recital. WWZ-Wanamaker's, New York City

WGI-Amrad, Medford Hillside, Mass (360 Meters — Eastern Daylight-Saving Time—Deduct One Hour.) 2:55 p.m.-News and music.

1:15 to 2:15 p.m.-Music and chil-

7:30 p.m .- News and music. WWJ-Detroit News (Eastern Standard Time).

9:30 a.m.—Tonight's dinner and household hints (360 meters).
9:40 a.m.—Music (360 meters).
10:15 a.m.—Weather report (485

meters).

11:55 a.m.—United States Naval Observatory time signals relayed by telegraph (360 meters).

12:39 p.m.—Music (360 meters).

3:30 p.m.—Weather report (485 meters).

3:40 p.m.—Market quotations (360 meters).

KDKA — Westinghouse, Pittsburgh (360 Meters, Eastern Standard Time).

scores. 9:55 to 10 p.m.—Arlington time sig-

KYW—Westinghouse, Chicago (360 Meters—Central Daylight-Saving Time—Same as Eastern Standard

9:25 a.m.—Opening market quota-tions, Chicago Board of Trade. 10 a.m.—Market quotations at onehalf hour intervals until 1 p.m. 1:20 p.m.-Closing market quotations.
2.15 p.m.—News and market report.

2.15 p.m.—News and market report.

3 p.m.—American and National
League base ball team line-ups; progress of games every half hour thereafter until their close.

4.15 p.m.—News, final market and
financnal returns.

6.30 p.m.—News, final market and
financial returns.

7.15 p.m.—Children's bedtime stories; base ball areport.

8 to 9 p.m.—Concert by the Corydon
Trio, and the Temple Chorus of
Englewood.

9 p.m.—News and sports.

9.05 p.m.—Special features as announced by radio phone.

WJZ-Westinghouse, Newark, N. J. (360 Meters-Eastern Daylight-Saving Time, Deduct One Hour). 9 a.m.—Agricultural reports and prices as released by New York, New Jersey and federal bureaus; program 10 a.m.-Program of music; Duo Art recital.

Noon-Agricultural reports; weather forecast; program of music; Duo

er forecast; program of music; Duo Art recital.

12:15 to 1 p.m.—Standard time signals from Arlington.

1 p.m.—Program of music.

2 p.m.—Shipping news by the Marine Engineering and Shipping Age; program of music.

3 p.m.—Program of music.

4 p.m.—Base ball scores; women's fashion news by the Women's Wear Daily, fashion newspaper; program of music.

5 p.m.—Base ball scores; program of music.

W. Cadwick), "Sylvia" (Oley Speaks), "Tommy, Lad" (Margetson), "Oh, Lovely Night" (Landin Donald), Royal M. Tinker, accompanied by Ella Schneider; "Mirth and Melody," Mitchel and Mitchel; cello solo, J. S. Zibly.

7 p.m.—Base ball scores; "Interior Decoration," by Joseph Horne Company of Pittsbrgh.
7:30 to 8 p.m.—Bedtime and Uncle Wiggliy stories for children.
8 to 9 p.m.—Piano selections by Churchill Van de Vetter; base ball scores; "Interior liams, secretary of the National Tennis Association.
8 p.m.—Concert under the direction of Charles D. Isaacson.
9:30 p.m.—Recital by Florence S.
Briggs, cellist.
10:52 to 11 p.m.—Arlington time signals.

11:01 p.m .- Weather forecast. WGR—Federal Telephone and Tele-graph Company, Buffalo, N. Y. (Eastern Daylight-Saving Time— Deduct One Hour.)

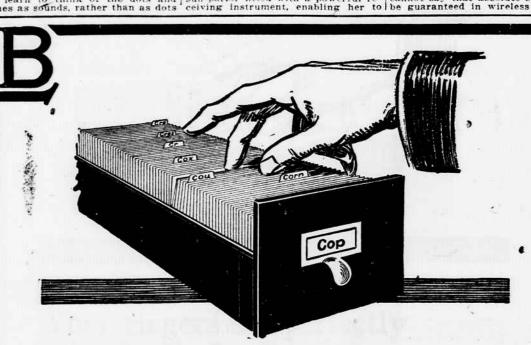
Noon—Weather and market reports (485 meters).
5:30 p.m.—Weather and market reports (485 meters).
8 p.m.—Base hall scores; bedtime stories for children; digest of day's news (360 meters).
8:15 p.m.—Concert by Federal Telephone and Telegraph Company (360 meters).

#### PACIFIC COAST STATES LEAD IN BROADCASTING

There were 310 broadcasting sta tions licensed by the Department of Commerce up to June 2 to send out news, entertainment and market and crop reports, five of which are in Washington. This number would have been 314, except that four stations have dropped out of the broadcasting business. These stations—one each in Illinois, California, Pennsylvania and the District of Columbia—are the only the District of Columbia—are the only ones which have stopped broadcasting since last June, according to officials of the Department of Commerce radio section; whereas new stations are being licensed at the rate of about three per day, they point out, although only fourteen were licensed this week.

California takes the lead in broadcasting development, according to

casting development, according to the latest figures, with sixty stations the latest ngures, with sixty stations. Ohio is next with twenty-three, Pennsylvania and New York are tied for third with twenty each, and Washington is a close fourth with nineteen, Illinois has thirteen, Missouri twelve, Texas eleven and New Jersey, Kansas and Oregon follow with ten each.



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